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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,003	04/01/2004	Hidekazu Arase	5077-000209	9576

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/816,003

Applicant(s)

ARASE ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/1/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1, claim 10, and claim 11 each recite method comprising a first mixing step, “a second mixing step of mixing a mixture obtained in the first mixing step and said additive; and a pH adjusting step, performed before the second mixing step, of preparing a solution including said mixture or a solution including said additive while adjusting said solution to a given pH range by using a pH adjuster”. The scope of each of the claims is confusing given that it is not clear how the second mixing step comprises mixing a mixture obtained in the first mixing step and said additive given that the pH adjusting, which is performed before the second mixing step, results in either solution including a mixture obtained in the first mixing step or solution including said additive. That is, given that the second mixing step occurs after the pH adjusting step, it appears that it is not a mixture or the additive but rather a solution including the mixture or a solution including the additive that would necessarily have to be utilized in the second mixing step. Clarification is requested.

(b) Claim 1, lines 2-3 recites “water-soluble dye having a water-solubilizing group of at least one of a sulfonic group and a carboxyl group”. The scope of the claim is confusing given that it is not clear how the water-soluble solubilizing group can be one of a combination of two compounds. That is, in light of the use of the word “and”, it is not clear if the water-soluble solubilizing group is either a sulfonic group or a carboxyl group or both a sulfonic group and a carboxyl group. In order to avoid confusion in the scope of the claim, it is suggested that the above phrase is rewritten as (i) “water-soluble dye having a water-solubilizing group of at least one selected from the group consisting of a sulfonic group and a carboxyl group” or (ii) “water-soluble dye having a water-solubilizing group of at least one of a sulfonic group or a carboxyl group”.

Similarly lines 4-5 of claim 1 recite “an additive including at least one of an organic acid salt and an inorganic acid salt”. The scope of the claim is confusing in light of the use of the word “and” because it is not clear if either an organic acid salt or an inorganic acid salt is required or both inorganic acid salt and organic acid salt is required. In order to avoid confusion in the scope of the claim, it is suggested that the above phrase is rewritten as (i) “an additive including at least one selected from the group consisting of an organic acid salt and an inorganic acid salt” or (ii) “an additive including at least one of an organic acid salt or an inorganic acid salt”.

Similar confusion arises in each of claim 10 and claim 11 that also each recite the above two cited phrases found in claim 1.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-5, and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 02/072719 taken in view of the evidence given in Shimizu et al. (U.S. 5,928,220).

WO 02/072719¹ discloses method for preparing ink comprising water, water-soluble medium, i.e. humectant, water-soluble dye, water-soluble substance that is condensation polymerized in the absence of water, and inorganic acid salt wherein the method comprises preparing buffer solution comprising inorganic acid salt, i.e. sodium dihydrogen phosphate, and pH adjusting agent, i.e. sodium hydroxide, that adjusts pH to 8-12, preparing mixture by mixing water-soluble dye, water, water-soluble medium, and water-soluble substance that is condensation polymerized in the absence of water, and then mixing the buffer solution and mixture to form the ink. It is noted that the water-soluble substance is a hydrolyzable silane such as organic silicon having amino group. Further, attention is called to examples 2-4 that utilize water-soluble dye that is Acid Black 2 which is well known, as evidenced by Shimizu et al. (col.2, lines 47 and 54), to have water-soluble solubilizing group that is sulfonic group. There is also disclosed ink jet printer comprising ink jet head containing ink cartridge comprising ink

¹ It is noted that when utilizing WO 02/072719, the disclosures of the reference are based on Soga et al. (U.S. 6,942,329) which is an English language equivalent of the reference. Therefore, the column and line numbers cited with respect to WO 02/072719 are found in Soga et al.

Art Unit: 1714

prepared from the above method wherein ink is ejected onto recording medium and transfer means for transferring the recording medium (col.1, lines 8-10, col.3, lines 19-22 and 48-58, col.4, lines 1-5, 19-25, and 44-50, col.4, line 65-col.5, line 7, col.7, lines 45-47 and 64-67, col.10, lines 25-30, col.17, lines 25-40 and 56-66, and col.18, lines 16-20 and 58-59).

In light of the above, it is clear that WO 02/072719 anticipates the present claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soga et al. (U.S. 6,929,686) in view of WO 02/072719 and Kanaya et al. (U.S. 5,985,015).

Soga et al. disclose ink jet printer comprising ink jet head containing ink cartridge comprising ink wherein the ink is ejected onto recording medium and transferring means for transferring the recording medium wherein the ink comprises water, water-soluble medium, i.e. humectant, water-soluble dye, water-soluble substance that is condensation polymerization in the absence of water, and organic acid salt or inorganic acid salt (col.1, lines 8-10, col.2, lines 9-12 and 35-57, col.3, lines 15-35, and col.6, lines 13-14, 30-33, and 36-67). It is noted that the water-soluble dye includes Acid Red 289 which is well known, as disclosed by Kanaya (col.4, lines 61-67), to have water-soluble solubilizing group that is sulfonic group or carboxyl group as presently claimed.

The difference between Soga et al. and the present claimed invention is the requirement in the claims of pH adjuster.

WO 02/072719, which is drawn to ink jet ink, discloses the use of pH adjuster to adjust pH of the ink. The motivation of for using such pH adjuster is to prevent the ink from becoming acidic after long preservation period while suppressing gelation of the ink and the corrosion and degradation of the ink jet head whereby deterioration of the image quality is also suppressed (col.3, lines 34-46).

While there is no disclosure in Soga et al. of process for making the ink, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Therefore, given that the cited references meet the requirements of the claimed ink composition, i.e. comprising water, water-soluble medium, i.e. humectant, water-soluble dye, water-soluble substance that is condensation polymerization in the absence of water, organic acid salt or inorganic acid salt, and pH adjuster, it is clear that the combination of Soga et al. with WO 02/72719 meets the requirements of present claims 10-11.

In light of the motivation for using pH adjuster disclosed by WO 02/072719 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such pH adjuster in the ink of Soga et al. in order to produce ink that does not corrode or degrade the ink jet head and produces image with good quality, and thereby arrive at the claimed invention.

Art Unit: 1714

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Arase et al. (U.S. 2003/0221586) disclose ink comprising water, water-soluble solvent, and water-soluble substance that is condensation polymerized in the absence of water. However, there is no disclosure in Arase et al. of inorganic acid salt or organic acid salt or pH adjuster to adjust pH as required in all the present claims and no disclosure of method for preparing the ink as required in present claims 1-9.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
12/31/06